

REMARKS

Applicants thank the Examiner for the thorough examination of the application. This preliminary Amendment is being filed concurrently with a Request for Continued Examination. No new matter is believed to be added to the application by this amendment.

Status of the Claims

Claims 3-7, 9-19, 22 and 23 are pending in the application. The Examiner has withdrawn claims 3-7, 9, 14-17 and 19 from consideration. Claim 20 is canceled by this Amendment and its subject matter is incorporated into claim 10. Claim 22 finds support at page 11, lines 14 and 15 of the specification. Claim 23 finds support at page 13, lines 5-10 of the specification. Withdrawn claims 3 and 4 have been amended to not depend on a canceled claim.

Current Rejections

Claims 11 and 13 are rejected under 35 U.S.C. §112, first paragraph as not being enabled. Claims 10-13, 18 and 20 are rejected under 35 U.S.C. §102(b) as being anticipated by Doverspike (U.S. Patent 6,459,100). Applicants maintain traversal.

One of the many novel features of the present invention arises from the tendency of excessive Al in the second layer to cause crystal defects that tends to degrade hole injection efficiency, especially when the layer is grown at lower temperatures. This degraded crystallinity renders difficult the realization p-type or low density n-type conductivity. As a result, the inventors have unexpectedly found that the addition of p-type dopants can successfully modulate the tendency towards defect driven excessive n-type conductivity.

Accordingly, the utilization of known doping technology would enable one of ordinary skill in the art to readily practice the invention without undue experimentation.

Further, the doping technology of the present invention is clearly not anticipated by Doverspike. Although the Examiner asserts that Doverspike discloses a layer 21 that is n-type, Doverspike utterly fails to disclose that this layer is n-type. Even if this n-type property is inherent in Doverspike (*but see* page 16 of the Amendment filed August 18, 2005), Doverspike would still fail to disclose or suggest utilizing a p-type dopant to modulate this n-type property (which would be uncontrollable due to defects) to produce a layer with low density n-type conductivity.

As a result, Doverspike fails to anticipate the present invention as set forth in claim 10. Claims depending upon claim 10 are patentable for at least the above reasons.

These rejections are overcome and withdrawal thereof is respectfully requested.

Prior Art

The prior art cited but not utilized by the Examiner indicates the status of the conventional art that the invention supercedes. Additional remarks are accordingly not necessary.

Information Disclosure Statements

The Examiner is thanked for considering the Information Disclosure Statement filed May 24, 2004 and for making the initialed PTO-1449 form of record in the application in the Office Action mailed September 8, 2004. The Examiner is thanked for considering the Information Birch, Stewart, Kolasch & Birch, LLP

Disclosure Statement filed August 23, 2004 and for making the initialed PTO-1449 form of record Advisory Action mailed October 28, 2005.

The Drawings

The Examiner has indicated that the drawing figures are acceptable in the Office Action mailed September 8, 2004.

Foreign Priority

The Examiner has acknowledged foreign priority in the Office Action mailed September 8, 2004.

Conclusion

The Examiner's rejections have been overcome, obviated or rendered moot. No issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert E. Goozner, Ph.D. (Reg. No. 42,593) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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(Tuesday After Holiday)



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